06-096

Department of Environmental Protection

Maine Solid Waste Management Rules:

CHAPTER 410

COMPOSTING FACILITIES

Effective:

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SUMMARY: This Chapter establishes the rules of the Department for the siting, design, operation and closure of solid waste composting facilities.

1. Applicability. This Chapter applies to solid waste composting facilities including certain Agricultural Composting Operations. A solid waste composting facility license under the *Maine Solid Waste Management Rules: General Provisions*, 06-096 CMR 400 and this Chapter is required to locate, establish, construct or operate any new composting facility or to alter an existing composting facility, unless that facility is exempt from licensing under these rules. Agricultural Composting Operations which are not exempt from licensing under the provisions of section 1(B) of this Chapter are subject to the requirements of sections 2 through 4 or section 6 of this Chapter.

Deleted: (last amended January 23, 2001)

A. Facilities Subject to the Requirements of this Chapter. A composting facility is any land area, structure, equipment, machine, device, system, or combination thereof that is operated to biologically decompose organic residuals under predominantly aerobic conditions and controlled temperatures between 110° and 160° F.

B. Facilities Not Subject to the Requirements of this Chapter. In addition to the facilities listed in the 06-096 CMR 400(2), the following facilities conducting only the specified activities listed are exempt from the requirements of this Chapter:

NOTE: See 06-096 CMR 400(1) for a full definition of residual types. Type IA residuals are leaf, vegetative and other residuals with a C:N ratio of greater than 25:1. Type IB residuals are food and other residuals with a C:N ratio of between 25:1 to 15:1. Type IC residuals are fish and other residuals with a C:N ratio of less than 15:1. C:N refers to the ratio of available carbon to nitrogen of the raw residual prior to composting. See Appendix B of this Chapter for a list of typical C:N ratios for various residuals. The lower the initial C:N the higher the potential for generation of nuisance odors and leachate generation. Type II residuals are sewage sludge, septage, and other residuals that may contain human pathogens. Type III residuals are petroleum contaminated soils and other residuals that may contain hazardous substances above risk based standards in 06-096 CMR 418, Appendix A.

(1) Facilities that, in any thirty (30) consecutive day period, receive for composting less than:

(a) Ten (10) cubic yards of Type IA residuals;

(b) Five (5) cubic yards of Type IB residuals; or

(c) Five (5) cubic yards of Type IC residuals;

(2) Facilities that compost domestic animal and poultry carcasses from routine events pursuant to the Maine Department of Agriculture, Food and Rural Resources *Rules and Regulations Relating to Disease Control of Domestic Animals and Poultry*, 01-001 CMR 211;

Deleted: (last amended October 12, 1996)

(3) Facilities that compost 10,000 cubic yards or less of animal manure per year;

NOTE: The facilities listed in section 1(B)(1) through (3) above should comply with the Department of Agriculture, Food and Rural Resources' Best Management Practices.

(4) Agricultural Composting Operations that, in any thirty (30) consecutive day period, compost a total of between five (5) and sixty (60) cubic yards of Type IB and IC residuals, and is operate in accordance with a Compost Management Plan approved by the Maine Department of Agriculture, Food and Rural Resources;

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(5) Agricultural Composting Operations that compost any volume of Type IA, Type IB or Type IC waste provided that at least 70% of the finished compost product is used at appropriate agronomic rates on the farm that produced the compost within two (2) years after it is produced, and provided that the facility is operated in accordance with a Compost Management Plan approved by the Maine Department of Agriculture, Food and Rural Resources;

(6) Agricultural Composting Operations that use leaves as an amendment to compost manure provided that the facility is operated in accordance a Compost Management Plan approved by the Maine Department of Agriculture, Food and Rural Resources;

(7) Agricultural Composting Operations that compost offal provided that the facility is operated in accordance with a Compost Management Plan approved by the Maine Department of Agriculture, Food and Rural Resources;

(8) The composting of solid waste during a Department-supervised remediation, emergency response, or research project; and

(9) Composting toilets as defined the in *Maine Subsurface Wastewater Disposal Rules*, 10-144 CMR 241(1004)(0).

C. Transition and relationship to other solid waste rules.

(1) Existing licensed composting facilities:

(a) Licenses held by existing composting facilities that are now exempt from these rules in accordance with section 1(B) of this Chapter will lapse provided that the licensee has surrendered its composting facility license and has a Compost Management Plan approved by the Department of Agriculture, Food and Rural Resources.

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(b) Composting facilities previously licensed pursuant to the *Maine Solid Waste Management Rules: Processing Facilities*, 06-096 CMR 409 remain in effect, subject to the conditions specified in 06-096 CMR 400(3)(E).

Deleted: (last amended June 16, 2006)

(2) Relationship to 06-096 CMR 409: This rule replaces those provisions of 06-096 CMR 409 that previously addressed composting facilities.

(3) Beneficial Use of Solid Waste: The beneficial use, other than agronomic utilization, of a secondary material produced by a composting facility is subject to the *Maine Solid Waste Management Rules: Beneficial Use of Solid Wastes*, 06-096 CMR 418.

Deleted: (last amended June 16, 2006)

(4) Agronomic utilization of residuals: The agronomic utilization of a residual produced by a composting facility is subject to the *Maine Solid Waste Management Rules: Agronomic Utilization of Residuals*, 06-096 CMR 419.

Deleted: (last amended December 19, 1999)

(5) Storage: Residuals produced at composting facilities and stored at other locations in Maine prior to agronomic utilization must meet the applicable standards of 06-096 CMR 419.

(6) Analysis: Characterization of waste and secondary materials required by this Chapter must be done in accordance with the applicable provisions of the *Maine Solid Waste Management Rules: Water Quality Monitoring, Leachate Monitoring, and Waste Characterization*, 06-096 CMR 405.

Deleted: (last amended June 16, 2006)

2. General Licensing Requirements. Except for facilities which are exempt from licensing pursuant to section 1.B of this Chapter or licensed under sections 5 and 6 of this Chapter, any person proposing to establish a new solid waste composting facility or alter an existing solid waste composting facility must obtain a license pursuant to 06-096 CMR 400(4) and sections 2 through 4 of this Chapter.

NOTE: 06-096 CMR 400(4) – General Licensing Criteria – is appended to this Chapter as Appendix A for ease of use.

A. Composting Facility General Siting Standards. At the time the application is filed with the Department, the waste handling area at a proposed composting facility may not be located:

(1) Closer than 100 feet to the solid waste boundary of an active, inactive or closed solid waste landfill;

(2) Within a 100 year flood plain;

(3) Within 100 feet of a protected natural resource;

(4) In, on or over a protected natural resource, or on land adjacent to the following areas, without first obtaining a permit pursuant to the *Natural Resources Protection Act*, 38 M.R.S.A. §§ 480-A to 480-BB:

(a) A coastal wetland, great pond, river, stream or brook, or significant wildlife habitat contained within a freshwater wetland; or

(b) Freshwater wetlands consisting of or containing:

(i) Under normal circumstances, at least 20,000 square feet of aquatic vegetation, emergent marsh vegetation or open water, except for artificial ponds or impoundments; or

(ii) Peatlands dominated by shrubs, sedges and sphagnum moss;

(5) Closer than 300 feet to off-site water supply wells or water supply springs;

(6) Closer than 100 feet to public roads and property boundaries;

(7) Closer than 10,000 feet to any airport runway used by turbojet aircraft, or within 5,000 feet of any airport runway used by only piston-type aircraft, when putrescible waste is to be handled outdoors in an uncovered or exposed condition.

B. Composting Facility General Design Standards.

(1) The facility process must be designed to produce a product meeting the specifications needed to distribute the product and must meet the applicable standards in 06-096 CMR 419.

(2) Design Capacity: The facility design must include composting systems and storage areas of sufficient capacity to accommodate all materials that are delivered to and generated by the facility.

(3) Environmental Monitoring Program Design: A composting facility which has been determined by the Department to pose a potential threat to public health or safety or the environment because of the nature and volume of feedstocks handled at the solid waste facility and/or the location, design and operation of the facility, must have a monitoring program designed and implemented in accordance with the applicable requirements of the 06-096 CMR 405.

(4) Leachate Control: The facility design must include provisions to contain, collect and treat all leachate and wash waters generated at the facility.

(5) Clean-up: The facility design must include provisions for the regular wash down or dry clean-up of the facility.

(6) Access: The facility design must include suitable barriers or fencing and gates to prevent unauthorized persons access to the site.

3. Application Requirements. Any person seeking to establish a solid waste composting facility under sections 2 through 4 of this Chapter must provide information sufficient to meet the standards and submission requirements of 06-096 CMR 400. The applicant must submit to the Department, on forms developed by the Department, the following information:

A. General Information.

(1) Description: A brief description of the proposed composting facility.

(2) Topographic Map: The most recent full size U.S. Geological Survey topographic map (7 1/2 minute series, if available) of the area, showing the location of the proposed facility, the property boundary, and, if handling putrescible materials, airports within 10,000 feet of the site, all clearly and accurately delineated. The map must include all surrounding areas within one mile of the proposed site.

(3) Aquifer Map: A legible copy of the most recent Maine Geological Survey Significant Aquifer Map or Sand and Gravel Aquifer map with the facility site, property boundary and waste handling area clearly and accurately delineated on the map.

(4) Tax Map: A legible copy of the local tax map(s) marked with the facility site and the names and addresses of abutters on the appropriate lots. For a person proposing outdoor composting or storage, the map must indicate all residences within 1,000 feet of the waste handling area.

(5) Flood Plain Map: If the proposed site is within 1/4 mile of a 100 year floodplain, a legible copy of the most recent Federal Emergency Management Agency (FEMA) flood insurance rate maps of the 100-year frequency floodplain, with the location of the facility and property boundary clearly and accurately delineated.

B. Site Design Characteristics. An engineering design must be submitted as part of an application. The sophistication of engineering design required to develop a site for a composting facility varies according to the physical characteristics of the site, the size and complexity of the facility, and the nature of the wastes to be composted. The following components must be included in any engineering design:

(1) Site Plan. A detailed plan of the area within 500 feet of the waste handling area, with a scale of 1 inch = 100 feet or a larger scale, clearly showing, if applicable: all structures; protected natural resources; roads; property boundaries; receiving, composting, curing and storage areas; residences; erosion and sedimentation control features; odor control structures; water supply wells and springs; water quality monitoring points; and barriers or fencing and gates to prevent unauthorized persons access to the site. For facilities involving outdoor handling of putrescible wastes in an uncovered or exposed condition, this plan must also note the direction and distance of airports within 10,000 feet of the waste and waste handling area.

(2) Plan Views of the Structures and Utilities. A large scale construction plan view drawing, with a minimum scale of 1 inch = 40 feet, clearly showing any building(s) with foundations; processing unit(s); utilities; leachate, storm water, and erosion and sedimentation control details; and, if applicable, odor control systems.

C. Composting Facility Design Characteristics.

(1) Process Design: A general description of the facility's waste composting system must be submitted. The complexity and degree of detail of the description will vary depending on the magnitude and complexity of the process. The description must include, if applicable, process flow diagram(s), the source, volume, and characteristics of wastes to be received, the products and wastes to be generated; the methods to be utilized to mix, process and store wastes and products; the processing equipment to be used on site; provisions for characterization, including analytical information demonstrating that the incoming wastes meet the classification proposed to be handled at the facility; an identification of applicable standards for the product that the facility will produce, including, residual standards from 06-096 CMR 419, or other applicable standards from these rules, and a description of how these standards will be met.

(2) Type of composting method used at the facility (i.e. static pile, aerated static pile, windrow, passive aerated windrow system, in vessel, agitated bin, etc.);

(3) Methods used in mixing, constructing compost piles or windrows, curing and storage;

(4) Mixing, windrow construction, screening, turning, and aeration equipment;

(5) Ratio of residuals and other ingredients that will be mixed together taking into account the intended use of the composted residual; and based on a recipe that balances the mixture's:

(a) Ratio of available carbon to nitrogen;

(b) Moisture content throughout the process;

(c) Bulk density throughout the pile;

(d) Volatile solids content; and

(e) pH

(6) Proposed dimensions of compost piles or windrows;

(7) Method and frequency of aeration, including turning frequency or mechanical aeration equipment;

(8) Duration of composting process, including curing or storage time; and

(9) When applicable, the standards in 06-096 CMR 419 that the residual is being processed to meet, and provisions to monitor residual temperature, oxygen and moisture or other parameters to demonstrate that the standard is met.

D. Compost Distribution and Use Plan. The applicant must submit the application information required for licensing a utilization program under 06-096 CMR 419. The applicant must describe the disposition of other materials, including residue, generated at the facility that are not covered under a beneficial use or agronomic utilization program. The Department may require financial assurance in the form of a letter of credit, escrow account, or other approved financial security to finance the cost of potential remediation or disposal of waste, residue, including compost screenings, or secondary materials.

E. Operations Manual. The applicant must submit an operations manual, containing the information required in section 4 of this Chapter.

F. Environmental Monitoring Plan. The applicant must submit an environmental monitoring plan pursuant to section 2(B)(3) of this Chapter, including a waste characterization analytical work plan, if required by the Department.

G. Odor control. Based upon the location, design, and operational procedures of the proposed facility, the applicant must demonstrate that the facility will not cause an odor nuisance. The facility may not cause more than a one hour average odor impact of 2 dilutions to threshold (2D/T), in any calendar year at any occupied buildings.

NOTE: D/T is defined by ASTM Method 679-91, "Standard Practice for Determination of Odor and Taste Thresholds By a Forced-Choice Ascending Concentration Series Method of

Limits". The applicant may wish to demonstrate that it will meet this standard at the processing facility's property boundary, to ensure that nuisance odors at occupied buildings will not occur if the areas near the facility are subsequently developed.

H. Site Investigation. A subsurface investigation must be conducted whenever the proposed composting facility includes the use of *in situ* soils as any part of a soil base pad for handling solid wastes, includes structures requiring foundations, or includes subsurface wastewater holding or disposal systems. The data must consist of soil test data in the proposed handling areas from a certified professional describing and evaluating the surficial geology and/or the subsurface soils. This information must demonstrate that the facility design is compatible with the site's soil characteristics, as determined by applicable engineering standards of practice.

4. Operating Requirements. Each composting facility subject to licensing under sections 2 and 3 or section 6 of this Chapter must comply with the following operating requirements. The composting facility must be operated and maintained in a manner that assures it will meet the approved design requirements; will not contaminate ground or surface water; will not contaminate the ambient air; will not constitute a hazard to health or welfare; will not create a nuisance; and will meet the standards in 06-096 CMR 400(4). Facilities with an existing solid waste composting license are required to operate in compliance with the provisions of this section.

A. Operations Manual. All composting facilities must be operated in accordance with a Department-approved operations manual that incorporates the operating requirements of its license and these rules. This manual must be available for inspection by Department staff during normal business hours. The facility's operations manual must be updated to keep current with revisions at the composting facility.

The operations manual must include the information that would enable supervisory and operating personnel, and persons evaluating the operation of the facility, to determine the sequence of operation, policies, procedures, monitoring, maintenance, inspection, and legal requirements that must be followed for safe and environmentally sound operation on a daily and yearly basis. The composting facility must be operated and maintained in a manner that assures it will meet the approved design requirements, will not contaminate ground or surface water, contaminate the ambient air, constitute a hazard to health or welfare, create a nuisance, and will meet the standards in 06-096 CMR 400(4). The manual must address all items contained in this section including the environmental monitoring plan, if required by the Department, and the odor control plan. The manual must also include a copy of the facility license, any amendments and revisions to that license, and a copy of the applicable sections of the most recent Solid Waste Management Regulations.

B. General Operations.

(1) Personnel: The operation of the composting facility must be under the overall supervision and direction of a person qualified and experienced in the operation of that type of facility or, in the case of an innovative design, be adequately trained by responsible personnel in the operation of the facility. The facility operator must take whatever measures are necessary to familiarize all personnel responsible for operation of the facility with relevant sections of the operations manual.

(2) Equipment: Equipment must be sufficient to meet the requirements, and the operator must provide for the routine maintenance of equipment.

(3) Environmental Monitoring: If required by the Department, the operator must implement the approved environmental monitoring program, including any required waste characterization.

(4) Fire Protection: The operator shall prevent and control fires at the composting facility by complying with at least the following:

(a) Arrange for a nearby fire department to provide emergency service whenever called;

(b) Develop and implement a plan to prevent spontaneous combustion in wood waste, residual and compost piles, as applicable; and

(c) Provide and maintain sufficient on-site equipment, such as detachable fire extinguishers, for minor fires.

NOTE: Facilities should develop a fire and rescue plan in conjunction with the local fire department.

(5) Vector Control: The on-site population of disease vectors must be minimized to protect public health.

(6) Dust Control: The operator must control dust generated by the facility.

(7) Storage:

(a) Raw materials, wastes, secondary materials, residue, including compost screenings, and finished compost, must be stored on the site such that they remain suitable for the intended use and may not be stored at the facility for more than 2 years.

(b) Materials with a carbon to nitrogen ratio (C:N) of less than 20:1 or that may contain constituents that may leach into groundwater may not be stored on *in situ* soils.

(c) Wastes, secondary materials and residue, including non-compostable compost screenings, may not be stored at the site for more than 2 years.

(8) Facility Maintenance and Litter Control: The operator must provide for routine maintenance and general cleanliness of the entire facility site, including control of windblown litter.

(9) Leachate Control: The facility must contain, collect and treat all leachate and stormwater runoff mixed with leachate.

(10) Sedimentation and Erosion Control: The facility must control sedimentation and erosion during construction and operation of the facility.

(11) Residue Disposal: The facility must provide for the routine disposal of residue, including non-compostable compost screenings, from the composting operation.

C. Access to Facility:

(1) The operator must maintain suitable barriers or fencing and gates to prevent unauthorized persons access to the site. The facility gate may be unlocked or open only when an authorized person is on duty. The operator must prominently post limitations and conditions of access at each entrance to the facility, including, if applicable, the hours of operation.

(2) The operator must provide and maintain in good repair access roads at the facility site.

(3) The operator must post appropriate signs and/or other means necessary to indicate clearly where waste is to be unloaded and where the separate storage areas within the facility are located.

(4) Adequate space must be maintained to allow the unobstructed movement of emergency personnel and equipment throughout operating areas of the facility.

D. Acceptance and Distribution of Solid Waste.

(1) The composting facility may only accept wastes for which it has been specifically designed and permitted by the Department. Incoming wastes must undergo a visual inspection and, if appropriate, analysis to ensure that only wastes allowed by the facility license are accepted at the facility. All other wastes must be removed and handled at an approved facility.

(2) Waste Disposal: The operator must have procedures in place, prior to the start of operation, for disposal of residue, bypass and other solid waste, including non-compostable compost screenings, generated by the composting facility, including contingency procedures for implementation during emergencies and shutdown periods. The operator must also maintain a valid contract with a solid waste facility which has Department approval to accept the waste.

(3) The facility may not incorporate painted wood, treated wood, plywood, chipboard, plastic, wood with fasteners, nails, glue, adhesives, resins, paint or coatings, or wood that is otherwise contaminated into the composting process. All such wood, if received at the facility, must be stored separately from wood used as amendment in the composting process and disposed in an approved solid waste disposal facility.

E. Odor Control.

(1) The facility must be operated to prevent nuisance odors at occupied buildings.

(2) Facility personnel must immediately contact the Department's Solid Waste Management Division to report odor complaints received by the facility. The Department, after investigation, will determine whether the facility has caused a nuisance odor at an occupied building. Facility personnel must, within 30 days of a Department determination of an off-site odor nuisance, report to the Department's Solid Waste Management Division, in writing, causes of odor generation and completed or planned follow-up action to minimize, control, and/or treat the odors from the facility.

F. Record Keeping. The facility operator must maintain the following records and make the records available for Departmental inspection and copying for the duration of the facility operation and a minimum of two (2) years after facility closure:

(1) When applicable, as-built engineering drawings of the facility;

(2) Results of analyses required by this Chapter and/or facility license;

(3) The Department-approved operations manual meeting the requirements of this section;

(4) Copies of periodic and annual reports submitted to the Department; and

(5) Operations Log: An operations log must be kept at any composting facility that is operated to reduce the pathogen content, reduce vector attraction properties, reduce putrescibility, reduce the carbon to nitrogen ratio, or otherwise stabilize a residual. The operations log must contain the source and volume of residuals received on a daily basis; the mixture of residuals composted at the facility; composting monitoring data; date, time and type of samples obtained from the facility; and volume and type of residuals and finished compost distributed from the facility on a daily basis, including to whom the residuals and finished compost are distributed.

G. Periodic Reporting. Licensees must submit periodic reports to the Department containing the results of environmental monitoring, including waste characterization, and any other information required in accordance with the facility license. Reporting periods will be identified in the individual facility license.

H. Annual Report. By February 28th of each year, the facility operator must pay the annual facility reporting fee established in Maine law, and submit an annual report to the Department for review and approval. The annual report must include a summary of activity at the composting facility during the previous calendar year. The annual report must summarize the facility's activities, and at a minimum include the following:

(1) Volume, source and type of wastes received by the facility;

(2) Volume of compost produced;

(3) Volume of compost, raw feedstocks, waste and residue, including non-compostable compost screenings, distributed off-site, and the locations to which any such items were distributed;

(4) Volume of compost, raw feedstocks, waste, secondary material, and residue, including non-compostable compost screenings, stored on site as of December 31;

(5) A general summary of the composting operation including problems encountered and follow-up actions, changes to the facility operation, and a summary of odor or other complaints received by the facility during the previous year;

(6) A discussion of any odor problems, and a discussion of any factors, either at the facility or elsewhere, which affected the operation, design, or environmental monitoring program of the facility.

(7) Other alterations to the facility site not requiring Departmental approval that have occurred during the reporting year. Minor aspects of the facility site proposed to be changed in the current year may be described in the annual report. Changes handled in this manner are those that do not require licensing under minor revision or amendment provisions of 06-096 CMR 400; and

(8) A summary and evaluation of the past year's environmental monitoring program results, if required by the Department.

I. Facility Closure.

(1) Closure Performance Standard. The facility must be closed in a manner that minimizes the need for further maintenance; and so that the closed facility will not pollute any waters of the state, contaminate the ambient air, constitute a hazard to health or welfare, or create a nuisance. At a minimum, the applicant must remove all compost, wastes, secondary materials, leachate and leachate-contaminated sediment, and residue, including compost screenings, from the facility. The applicant must stabilize all site soils in accordance with Maine erosion and sediment control best management practices. The applicant must broom clean the facility structures and equipment.

(2) Closure Plan: The operator of a composting facility shall submit a closure plan to the Department, for review and approval, a minimum of ninety (90) days prior to the proposed date of the closure of a solid waste composting facility. The plan must include:

(a) An description of the proposed closing operation;

(b) A schedule for the removal of all stored compost, wastes, secondary material, leachate and leachate-contaminated sediment, and residue, including compost screenings; and

(c) The intended destination of all stored compost, wastes, secondary material, leachate and leachate-contaminated sediment, and residue, including compost screenings.

5. Permit-By-Rule Composting Of Wood, Leaf And Yard Wastes.

A. Applicability.

(1) New Facilities: The permit-by-rule licensing provisions of this section shall apply to owners or operators of facilities that compost Type IA residuals and grass clippings and that meet all of the standards of this section. Failure to meet any of these standards will require formal application to the Department for a license to develop and operate the solid waste composting facility under sections 2 through 4 or section 6 of this Chapter. By adopting these provisions, the Department finds that the composting of Type IA residuals and grass clippings in strict conformity with these permit-by-rule provisions will meet the standards of 06-096 CMR 400(4). Facilities licensed under this section are exempt from the requirements of 06-096 CMR 400(9). No variances to the requirements of this section may be granted.

NOTE: See 06-096 CMR 400(1) for a full definition of residual types. Type IA residuals are leaf, vegetative and other residuals with a C:N ratio of greater than 25:1 See Appendix B of this Chapter for a list of typical C:N ratios for various residuals.

(2) Existing Licensed Facilities: Composting facilities previously licensed pursuant to 06-096 CMR 409(8) remain in effect, subject to the conditions specified in 06-096 CMR 400(3)(E).

B. Standards and Operating Requirements:

(1) The composting facility may only receive Type IA residuals and grass clippings. It may not accept painted wood, treated wood, plywood, chipboard, plastic, wood with fasteners, nails, glue, adhesives, resins, paint or coatings, or wood that is otherwise contaminated.

(2) The total waste handling area may not exceed three (3) acres and total on-site storage areas may not exceed one (1) acre. Individual storage piles may not exceed 10,000 square feet.

(3) Setback Distances: At the time a complete permit-by-rule notification is submitted to the Department, proposed storage, processing, composting, or curing of any regulated residual may not lie within:

(a) 500 feet of any water supply spring;

(b) 500 feet of any water supply well and any residence, unless owned by the site operator or owner;

(c) 100 feet of any protected natural resource;

(d) In, on or over a protected natural resource, or on land adjacent to the following areas, without first obtaining a permit pursuant to the *Natural Resources Protection Act*, 38 M.R.S.A. §§ 480-A to 480-BB:

(i) A coastal wetland, great pond, river, stream or brook, or significant wildlife habitat contained within a freshwater wetland; or

(ii) Freshwater wetlands consisting of or containing:

a. Under normal circumstances, at least 20,000 square feet of aquatic vegetation, emergent marsh vegetation or open water, except for artificial ponds or impoundments; or

b. Peatlands dominated by shrubs, sedges and sphagnum moss;

(e) 100 feet of any property boundary;

(f) 100 feet of the solid waste boundary of an active, inactive, or closed solid waste landfill; and

(g) A 100-year flood plain.

(4) Soils: The applicant may only compost, cure and store residuals on:

(a) Soils that a Maine Certified Soil Scientist has determined are moderately well drained to well drained, as classified by the Natural Resources Conservation Service, and that are at least 24 inches above the seasonal high water table, bedrock, and sand or gravel lenses;

(b) A pad constructed with the surface at least two (2) feet above the seasonal high water table and is either composed of:

(i) Two (2) feet of glacial till (having between 15 and 35% fines) covered with a six (6)-inch drainage layer of gravel; or

(ii) Soil covered with asphalt or concrete; or

(c) A surface determined by a Maine Certified Soil Scientist, soil engineer or other qualified individual as being suitable for the proposed activity, taking into account the other aspects of the facility design; or

(d) On a land area under a permanent, roofed structure.

(5) Drainage: Surface water drainage must be diverted away from processing, composting curing, and storage areas.

(6) Slopes: Compost windrows must be constructed on a pad or surface with a maximum slope of 6%. Where necessary, the working surface for windrows must be constructed to prevent ponding.

(7) The facility must be operated so that it does not contaminate water, land or air from the handling, storage or composting of wood, leaf, and yard wastes.

(8) Inspection and access control: The operator must control unauthorized access to the site and visually inspect incoming residuals so that only Type IA residuals and grass clippings are accepted at the facility.

(9) Pile Construction: Incoming Type IA residuals must, within one week of delivery to the site, be formed into windrow piles 10 feet high by 15 to 20 feet wide at the base, or other configuration that provides for the proper conditions under which aerobic composting will occur. Windrows must run with the slope of the pad such that runoff is not trapped by the windrows.

(10) Grass: Grass clippings must be incorporated, and thoroughly mixed into established windrows at a ratio of no more than one part grass to three parts Type IA residuals (1 grass:3 carbonaceous-material) by volume within 24 hours of receipt at the facility. The composting facility must not accept grass clippings unless there is a sufficient volume of Type IA residuals available to meet this ratio.

(11) Windrow turning: The windrow must be turned at least four (4) times per year. There must be no more than six (6) months between any two (2) turnings.

(12) Distribution: Compost must be distributed for use within one (1) year of completion of the compost process, and within three (3) years of receipt of the raw materials for composting.

(13) Fire control: The operator must develop and implement a plan to prevent spontaneous combustion in residual and compost piles at the site.

(14) Annual Report: By February 28th of each year, the operator must submit an annual report covering the previous calendar year. The annual report must contain:

(a) The estimated volume of residuals received at the facility;

(b) An estimated volume of compost produced at the facility;

(c) The estimated volume of compost distributed from the facility;

(d) The estimated volume of compost and residue, including compost screenings, stored on site as of December 31st; and

(e) A description of any problems in operations encountered during the year, and steps taken to correct those problems.

(15) Closure: The facility must be closed in a manner that minimizes the need for further maintenance; and so that the closed facility will not pollute any waters of the state, contaminate the ambient air, constitute a hazard to health or welfare, or create a nuisance. At a minimum, the applicant must remove all compost, wastes, secondary materials, and residue, including compost screenings, from the facility; and broom clean the facility structures and equipment.

C. Notification Requirements. At least 15 working days prior to acceptance of Type IA residual or grass clippings at the facility for composting, the applicant shall submit to the Department a permit-by-rule notification on a form developed by the Department. This notification must include:

(1) The applicant's name, address, telephone number and contact person.

(2) The appropriate application fee.

(3) Description: A brief description of the proposed project including a description of the residual to be processed.

(4) Title, Right, or Interest: A demonstration of sufficient title, right or interest to the property proposed for development, as specified in 06-096 CMR 2(7).

(5) Topographic Map: A legible copy of the most recent full size U.S. Geological Survey topographic map (7 1/2 minute series, if available) of the area, showing the location of the proposed facility, and the property boundary clearly and accurately delineated.

(6) Flood Plain Map: If the proposed site is within 1/4 mile of a 100 year floodplain, a legible copy of the most recent Federal Emergency Management Agency (FEMA) flood insurance rate maps of the 100-year frequency floodplain, with the location of the facility and property boundary clearly and accurately delineated.

(7) Tax Map: A legible copy of the local tax map marked with the facility location and the names and addresses of abutters marked on it. The map must indicate all residences within 500 feet of the waste handling area.

(8) Soil and Pad Design: One of the following:

(a) A certification from a Maine Certified Soil Scientist that the soils where residuals will be composted and cured are moderately well-drained to well-drained, as classified by the Natural Resources Conservation Service, and that are at least 24 inches above the seasonal high water table, bedrock, and sand or gravel lenses; or

(b) A description of the pad or other surface that the residual will be composted and cured on, and which of the standards in section 5(B)(4) of this Chapter that surface meets; or

(c) A certification from a Maine Certified Soil Scientist, soil engineer or other qualified individual that the surface is suitable for the proposed activity, taking into account the other aspects of the facility design; or

(d) A certification that all composting and curing will be conducted under a permanent, roofed structure.

(9) A fire control plan to prevent spontaneous combustion in residual and compost piles.

(10) Public Notice: A copy of the public notice and other information to demonstrate that the applicant is fulfilling the requirements of 06-096 CMR 400(3).

(11) Certification: A statement signed by the facility landowner and the person responsible for the facility stating that all standards and requirements of this section will be met throughout operation and closure of the facility.

6. Reduced Procedure For Select Compost Facilities.

A. Applicability. This section applies to compost facilities that choose to follow the siting, design and operational standards in this section and compost the following residuals:

(1) Any amount of Type IA residuals; and/or

(2) Up to 400 cubic yards monthly of Type IB residuals; and/or

(3) Up to 200 cubic yards monthly of Type IC residuals or up to 200 cubic yards monthly of Type II residuals.

If the conditions of this section will not be met, or if the applicant chooses to site, design or operate the facility in a manner that would not meet the standards of this section, then the applicant must submit an application to the Department for a license to develop and operate the compost facility under sections 2 through 4 of this Chapter. Facilities licensed under this section are subject to the operating standards in section 4 of this Chapter.

B. Reduced Procedure Siting and Design Standards. In addition to the general siting and design standards contained in section 2 of this Chapter, a compost facility licensed under this section must comply with the following standards:

(1) Working surface: Mixing, composting, curing, storing or otherwise handing residuals, and compost at the facility must be on surfaces meeting one of the following standards:

(a) On soils that a Maine Certified Soil Scientist has determined are moderately well-drained to well-drained, as classified by the Natural Resources Conservation Service, and that are at least 24 inches above the seasonal high water table, bedrock, and sand or gravel deposits.

(b) On a pad that is constructed a minimum of two (2) feet above the seasonal high water table and is either composed of:

(i) a minimum of eighteen (18) inches of soil material having between 15 and 35% fines, covered with a minimal six (6)- inch drainage layer of compacted gravel; or

(ii) soil covered with asphalt or concrete.

(c) Alternative surface: On a surface determined by a Maine Certified Soil Scientist, soil engineer or other qualified individual as being suitable for the proposed activity, taking into account the other aspects of the facility design, such as a roofed structure or in-vessel system. An applicant must arrange a pre-application meeting with the Department if proposing an alternative surface under this section.

(2) Pad: At a facility handling Type IC residuals, the receiving and mixing pad must be constructed with asphalt, concrete, or other similar material. At a facility handling any amount of Type II residuals, or more than 750 cubic yards of Type IC residuals annually, the entire waste handling area must consist of a pad constructed of asphalt, concrete, or other similar material for the entire waste handling area, excluding the storage area for compost meeting the requirements of section 6(C)(5) of this Chapter.

(3) Runoff, Storm Water, and Leachate Control: Surface water drainage must be diverted away from receiving, processing, composting, curing, and storage areas. The facility must also be designed to manage runoff and collect all leachate to prevent contamination of groundwater or surface water. Water falling on the facility during a storm of an intensity up to a 25-year, 24-hour storm event must infiltrate or be detained such that the storm water rate of flow from the facility after construction does not exceed the rate prior to construction. The facility design must include provisions to contain, collect and treat any leachate and contaminated stormwater or runoff generated at the facility.

(4) Slopes: Surfaces on which composting takes place must slope between 2% and 6%, and where necessary, be graded to prevent ponding of water.

C. Operating Requirements. In addition to the operating requirements of section 4 of this Chapter, a compost facility licensed under this section is subject to the following additional operating requirements. Facilities licensed pursuant to 06-096 CMR 409(9) are subject to the operating requirements of section 4 of this Chapter, and the following additional operating requirements:

(1) Pad Inspection: All soil surfaces used for residuals mixing and composting must annually be graded clean and re-compacted. All concrete and asphalt pads must annually be scraped clean and inspected for cracks or other deformities, and repaired as needed. The operator must maintain the minimum two (2)-foot separation to bedrock, groundwater and sand or gravel deposits.

(2) Odor Control: The facility must be operated to prevent nuisance odors. The facility must:

(a) Operate and maintain the odor control system approved by the Department;

(b) Receive incoming putrescible residuals on a pile of sawdust or other sorbent, high carbon compost amendment;

(c) Contain and treat process air or cover odorous piles with a layer of finished compost or other suitable compost amendment;

(d) Properly aerate piles such that composting is aerobic throughout the pile;

(e) Blend materials to achieve a homogenous mix throughout the pile; and

(f) Alter the compost recipe as needed to alleviate odorous emissions.

(3) Pathogen treatment and vector attraction reduction: Type IC residuals with the potential to contain human pathogens and Type II residuals must be composted to achieve a Class A Pathogen Reduction and Class A Vector Attraction Reduction in accordance with 06-096 CMR 419, Appendix B, unless otherwise approved in the facility's utilization license issued under 06-096 CMR 419. To attain these standards by composting, all of the following standards must be met:

(a) Pathogen Reduction: Each particle of residual is maintained at 55 degrees Celsius or higher for at least three (3) consecutive days. For windrow systems, this standard is presumed to be met if the residual is maintained at operating conditions of 55 degrees Celsius or higher for 15 days or longer, and during the period when the compost is maintained at 55 degrees or higher, there is a minimum of five turnings of the compost pile.

(b) Vector Attraction Reduction: Residual must be treated by an aerobic composting process for 14 days or longer. During that time, the temperature of the residual must be higher than 40 degrees Celsius and the average temperature of the residual must be higher than 45 degrees Celsius.

(c) Analytical Standard: The density of *Salmonella sp*. bacteria in the finished compost must be less than three (3) Most Probable Number per four (4) grams of total solids (dry weight basis) or the density of fecal coliform in the finished compost is shown to be less than 1000 Most Probable Number per gram of total solids (dry weight basis). This analytical standard must be met at the time the compost is distributed for utilization.

(4) Static Pile Composting: The following additional standards apply to composting Type IC or Type II residuals using the static pile method:

(a) The static piles must be aerated during the active composting stage;

(b) Detention time in the static aerated pile must be at least 21 days;

(c) If an auger, tub grinder hammer mill, or other Department-approved mixer is not used to mix the initial ingredients for the pile, the pile must be broken down half way through the active composting process and re-formed.

(d) To maintain temperatures throughout the pile and control odors, the pile must be fully covered with an insulating blanket of at least 12 inches of finished compost, sawdust, or other material as approved by the Department during the active compost phase.

(5) Stability/Maturity: Residuals that have completed the active composting phase and are only destined for bulk distribution for direct agricultural uses or blending with other residuals must also be cured until the equivalent of a Dewar's stability class of III or greater is achieved and the final C:N ratio of the finished compost is less than 25:1. Additionally, compost that is destined for bagging or high-end horticultural purposes must be cured until the equivalent of a Dewar's stability class of IV or greater is achieved, the final C:N ratio is less than 25:1 and the total NH_3-N is less than 800 parts per million.

NOTE: Compost facility operators may opt to use other industry standard tests to achieve this standard, provided that they receive written approval from the Department.

(6) An operations log must be kept at the facility and made available for Department review during normal business hours. The operations log must contain the following:

(a) Source and volume of residual received on a daily basis;

(b) Date of individual pile construction and breakdown;

(c) Pile composition (mixture recipe);

(d) Date and time of turning or otherwise aerating;

(e) Process monitoring data;

(f) Date the pile is put into curing and the date it is taken out of curing;

(g) Date, time, volume, and type of samples obtained from the facility;

(h) Name of the person collecting samples at the facility.

(7) The facility may not receive more than the volumes in section 6(A) of this Chapter.

(8) Residuals must be handled on approved surfaces. Type IC and Type II residuals must be offloaded and mixed on a receiving pad meeting the standards in section 6(B)(2) of this Chapter.

D. Application Requirements. The applicant shall submit to the Department, on forms developed by the Department, information sufficient to meet the standards and submissions requirements of 06-096 CMR 400(4) and the application requirements of section 3 of this Chapter. For outdoor compost facilities, instead of the site investigation information required by section 3(H) of this Chapter, the applicant may submit a report from a Maine Certified Soil Scientist or other qualified individual that either:

(1) Verifies that the waste handling areas for the proposed facility are on soils that are moderately well-drained to well-drained, as classified by the Natural Resources Conservation Service, and are at least 24 inches above the water table, bedrock, and sand or gravel deposits; or

(2) Identifies all major limitations to the proposed development presented by the soil characteristics and describes the techniques to be used to overcome the soil limitations identified in the soil survey.

STATUTORY AUTHORITY: 38 MRSA sections 341-D(1-B) and 1304(1 & 1-B)
EFFECTIVE DATE:
February 18, 2009 – filing 2009-73

APPENDIX A: 06-096 CMR 400(4)
GENERAL LICENSING CRITERIA

4. General Licensing Criteria. This section contains general standards applicable to the licensing of solid waste facilities. This section also lists submissions required of applicants for new or expanded facilities in order for the Department to determine if the general licensing criteria are met. All applicants must demonstrate compliance with the criteria of this section and submit the listed submissions unless otherwise provided in the relevant facility chapter. Required submissions for amendments, minor revisions and limited permits will be determined by the Department on a case-by-case basis to determine if the proposal meets the relevant general licensing criteria.

A. Title, Right or Interest

(1) Standards. The applicant must demonstrate to the Department's satisfaction sufficient title, right or interest in all of the property which is proposed for development or use.

(2) Submissions. The applicant must submit evidence of sufficient title, right or interest as provided in Chapter 2, section 7(D).

B. Financial Ability

(1) Standards.

(a) The applicant must have the financial ability to design, construct, operate, maintain, close and (if applicable) accomplish post-closure care of the solid waste facility in a manner consistent with all applicable requirements.

(b) The applicant for a solid waste disposal facility shall provide adequate financial assurance for closure, post-closure care, and for corrective action for known releases in compliance with the financial assurance requirements of section 11.

(2) Submissions. The application must include evidence that affirmatively demonstrates that the applicant has the financial ability to undertake the proposed project, including the following information, when appropriate:

(a) Accurate cost estimates for the design, construction, operation, maintenance, closure and (if applicable) post-closure care of the solid waste facility.

(b) Evidence that funds are or will be available to design, construct, operate, maintain, close and (if applicable) accomplish post-closure care of the solid waste facility, or to contract for the same, including the following:

(i) when a financial institution is the funding source, the application must include:

a. a letter from a financial institution, governmental agency, or other funding agency indicating a commitment to provide a specified and sufficient amount of funds and the uses for which the funds may be utilized; or

b. in cases where funding is required but there can be no commitment of money until approvals are received, a letter of "intent to fund" from the appropriate

funding institution. Evidence of financing must be provided prior to project construction.

(ii) when self-financing is a funding source for the solid waste facility, the application must include:

a. the most recent corporate annual report indicating availability of sufficient funds to finance the proposed project, through self-financing, together with explanatory material interpreting the report;

b. evidence that funds are available and have been set aside for completion of the proposed project; or

c. if the applicant is a governmental entity, evidence that the entity has the bonding or other capacity to finance the proposed project.

C. Technical Ability.

(1) Standards

(a) The applicant shall have the technical ability to design, construct, operate, maintain, close and (if applicable) accomplish post-closure care of the solid waste facility in a manner consistent with state environmental requirements, including the Maine Solid Waste Laws and these rules.

(b) The applicant shall meet the civil/criminal record standards of section 12.

(2) Submissions. The application must include evidence that affirmatively demonstrates that the applicant has the technical ability to design, construct, operate, maintain, close and (if applicable) accomplish post-closure care of the solid waste facility, including information such as the following:

(a) A statement of the applicant's prior solid waste management experience or appropriate training or both;

(b) A description of the personnel who will be employed to design, construct, operate, maintain, close and (if applicable) accomplish post-closure care of the proposed facility; and

(c) The proposed owner's and operator's prior conduct as a measure of their willingness and ability to meet all terms and conditions of approval established by the Department including information addressing all of the information required in section 12.

D. Provisions for Traffic Movement.

(1) Standards. The applicant for a solid waste facility must make adequate provisions for safe and uncongested traffic movement of all types into, out of, and within the proposed solid waste facility.

(a) The major haul routes must be able to safely accommodate the number, weight and types of vehicles transporting waste to and from the proposed solid waste facility.

(b) The entrance and exit design for the proposed solid waste facility must have safe sight distances in all directions and provisions for safe turning.

(c) Improvements to roads or intersections that are necessary due to the establishment of the proposed solid waste facility must be completed prior to initial operation of the solid waste facility unless an alternative schedule is approved by the Department.

(d) Major interior travel lanes must be designed to allow continuous and uninterrupted traffic movement without posing danger to pedestrians or other vehicles.

(e) The facility road construction and maintenance must provide safe traffic movement.

(f) On-site circulation patterns must be clearly defined.

(2) Submissions. The application must contain evidence that roads and intersections in the vicinity of the proposed solid waste facility will safely and conveniently handle the traffic attributable to the facility. This evidence must include the following:

(a) An estimate of the number, weight, and types of vehicles that will be transporting waste to and from the proposed facility.

(b) A map clearly delineating the anticipated major haul routes to and from the facility to be used by vehicles serving or using the solid waste facility, with a description of the road characteristics including legal weight limits and restrictions.

(c) An identification of all sections of roads and intersections along the projected haul routes that are:

(i) congested locations, or

(ii) not rated to handle the weights or types of vehicles expected to transport solid waste to or from the facility.

(d) Identification of vehicle routing decisions that were made based on these limits and a description of any actions the applicant proposes to take.

(e) A Maine Department of Transportation inventory and analysis of traffic accidents on roads and at intersections within a quarter mile of the proposed solid waste facility entrances and exits during the most recent 3-year period. The inventory must include identification of high accident locations and identification of feasible countermeasures based on discernible accident patterns at any high accident location.

(f) Sight distances at the proposed solid waste facility entrances and exits and a copy of the Maine Department of Transportation entrance permit, if applicable, or if the solid waste facility entrance is not located on a state supported highway, evidence that a qualified professional has certified that safe sights distances will exist in all directions. This review must be conducted in conformance with the standards specified in A Policy on Geometric

Design of Highways and Streets, American Association of State Highway and Transportation Officials (1994); and the Highway Design Guide, Maine Department of Transportation (September 1990). Intersection sight distance is the length of roadway visible to the driver. It must be measured from the intersection (at a point 10 feet back from the edge of the travel way) to the centerline of the opposing lane(s).

Note: Additional information concerning safe sight distances and other access management standards applicable to Maine can be found in, Access Management Improving the Efficiency of Maine Arterials A Handbook for Local Officials, Maine Department of Transportation (1994).

(g) The nature of the interior roadways, intersections and parking facilities, including the following:

(i) road construction, number of lanes, width of road, speed limit, and traffic circulation of the proposed roads;

(ii) areas of pedestrian use;

(iii) how circulation patterns will be defined; and

(iv) how the facility roads will be maintained.

(h) A traffic study, if required by the Department. The Department will require a traffic study if the application does not contain sufficient information to determine that all of the traffic standards of this section will be met. A traffic study may also be required if a traffic standard that is not met could possibly be corrected by application or design changes that require additional information. The Department's determination that a traffic study is required may be based solely on information or comments submitted to it by the Maine Department of Transportation.

(3) Elements of a Traffic Study. A traffic study must meet the requirements of this paragraph. The year for which the study results are to be characterized is the projected first year of full operation. If the proposed solid waste facility is a multi-phase project with a projected completion date more than 5 years after the year of the study, the Department may require that the study results be characterized for the year that corresponds to the opening of the first major phase or to the timing of transportation system improvements, such as a major bridge construction project.

At a minimum, the traffic study must contain the following:

(a) A brief description of the physical characteristics of the solid waste facility. This section must identify the size of the facility site, general terrain features and unique terrain features.

(b) A regional map showing the proposed solid waste facility, each road in the vicinity of the proposed facility and proposed haul routes to and from the facility for the vehicles that will use or serve the facility.

(c) A description of traffic increases that are expected from sources other than the proposed solid waste facility and that are likely to occur in the vicinity of the proposed solid waste facility during the study period. At a minimum, the study must identify development or redevelopment proposals which have been approved, either locally or by the Department, and development or redevelopment proposals for which complete applications have been filed with and accepted by a local reviewing authority or the Department at the time of the traffic study.

(d) Trip generation calculations for the proposed solid waste facility and for other proposed development and redevelopment projects in the vicinity of the proposed solid waste facility. If data from the "Trip Generation Guide" of the Institute of Transportation Engineers, is not available for other proposed development and redevelopment projects, trip generation must be estimated in accordance with a methodology approved by the Maine Department of Transportation.

(e) A diagram of the traffic volume on roads and intersections in the vicinity of the proposed solid waste facility for both the estimated annual average daily traffic and the A.M./P.M. peak hour traffic, including turns during the peak hour. Traffic diagrams must show the following:

(i) traffic attributable to the facility and other developments.

(ii) existing traffic volume. All traffic counts must be actual counts whenever possible. Traffic counts from the Maine Department of Transportation may be used if not more than two years old.

(iii) projected traffic volume for the hours required above at the time the facility will begin full operation.

(iv) documentation, including all new traffic counts and analysis worksheets, as to how the various volumes were derived to accompany the diagrams.

(f) A capacity analysis must be performed to determine the level of service for each road and intersection in the vicinity of the proposed solid waste facility. Capacity calculations must be made for the 30th highest hour of traffic during the year that the facility would begin operation, or any other appropriate design hour approved by the Maine Department of Transportation. Where it is shown that the capacity analysis methodology will not accurately measure operating conditions or levels of service at a road or intersection, the Department may require an applicant to analyze operating conditions of an intersection or road using another methodology acceptable to the Maine Department of Transportation.

(g) The need for new traffic signals in the vicinity of the proposed development must be analyzed using the warrants in the Manual on Uniform Traffic Control Devices, US. Department of Transportation, Federal Highway Administration (1988). Although an intersection may meet the MUTCD warrants, the Maine Department of Transportation may determine that a signal is not appropriate.

(h) A determination of the available sight distances in all directions at each intersection in the vicinity of the proposed development. Intersection sight distance is the length of roadway

visible to the driver. It must be measured from the intersection (at a point 10 feet back from the edge of the travel way) to the centerline of the opposing lane(s).

(i) If the study analyses indicate that unsatisfactory levels of service or unsafe conditions exist or will occur at intersections or on roads in the vicinity of the proposed development, a description of the measures recommended to remedy the deficiencies, including the following.

(i) Recommended Improvements. A description and diagram of the location, nature, and extent of recommended improvements to roads and intersections in the vicinity of the proposed development. Accompanying this list of improvements must be preliminary cost estimates. Of the recommended improvements, those proposed for implementation must be identified.

(ii) Capacity Analysis After Improvement. A description of the anticipated results of making these improvements.

(j) A clear, concise summary of the study findings.

E. Fitting the Solid Waste Facility Harmoniously into the Natural Environment

(1) Standards

(a) The solid waste facility must have buffer strips of sufficient size and quality to adequately protect aquatic and wildlife habitat and the natural environment. The facility may not unreasonably adversely affect protected natural resources and rare, threatened and endangered plant and animal species.

(b) The solid waste facility must have a minimum of 100 feet of buffer between the facility site and those locations and habitats listed above, unless otherwise approved or required by the Department.

(2) Submissions. For solid waste facilities with waste handling areas of less than 3 acres total area, the applicant shall include letters from the Maine Department of Inland Fisheries and Wildlife and from the Natural Areas Program of the Maine State Planning Office that the facility will not unreasonably adversely impact protected significant wildlife habitat, fragile mountain areas, or rare, threatened and endangered plant or animal species. For all facilities with waste handling areas larger than 3 acres, the applicant shall include evidence that affirmatively demonstrates that the solid waste facility fits harmoniously into the natural environment. This includes the following:

(a) The proposal must include adequate buffer strips. This information must include:

(i) the location and description of the locations, habitats, and species listed above that are within or adjacent to the facility site;

(ii) the nature, location, width, and height of all buffer strips to be retained or enhanced;

(iii) the nature, location, width, and topography of all buffer strips that need to be established to restore buffer functions in areas that will be disturbed;

(iv)-provisions for the maintenance of all buffer strips and screens;

(v) a description of how buffer strips of sufficient area, width, and character will be established, maintained or enhanced to protect the locations and habitats; and

(vi) an explanation of how the proposed solid waste facility and activities will not unreasonably adversely affect protected natural resources.

(b) The application must identify all unusual natural areas on or adjacent to the facility site and must include evidence that affirmatively demonstrates that the proposed facility will not unreasonably adversely affect protected natural resources.

F. No Unreasonable Adverse Effect on Existing Uses and Scenic Character

(1) Standards. The solid waste facility may not unreasonably adversely affect existing uses and scenic character. Specifically, the facility may not:

(a) Present a bird hazard to aircraft;

(b) Have an unreasonable adverse effect on the preservation of historical sites;

(c) Unreasonably interfere with views from established public viewing areas;

(d) Generate excessive noise at the property boundary or at any protected location; or

(e) Unreasonably adversely affect existing uses of property neighboring the proposed solid waste facility.

(2) Noise Standards. The following noise standards shall apply to all solid waste facilities. Protected locations shall only include those locations defined in subsection 400.1 for which the hourly sound levels from the facility will be greater than 45 dBA.

(a) Sound Level Limits. The following hourly sound levels from routine operation of a solid waste facility must be less than or equal to;

(i) 75 dBA for daytime and nighttime hours at the facility property boundary;

(ii) 60 dBA for daytime hours and 50 dBA for nighttime hours at any protected location in an area for which the zoning, or, if unzoned, the existing use or use contemplated under a comprehensive plan, is not predominantly commercial or industrial; or

(iii) 70 dBA for daytime hours and 60 dBA for nighttime hours in an area for which the zoning, or if unzoned, the existing use or use contemplated under a comprehensive plan, is predominantly commercial or industrial.

(b) Alternative levels. If the applicant chooses to demonstrate by measurement that the daytime or nighttime pre-development ambient sound environment at any protected location exceeds the daytime or nighttime limits above, by at least 5 dBA, then the daytime or nighttime limits are 5 dBA more than the measured daytime or nighttime pre-

development ambient hourly sound level at the location of the measurement for the corresponding time period.

(c) Existing Facilities. For any protected location near an existing solid waste facility, the hourly sound level limit for routine operation of the existing facility and all future expansions of that facility is the hourly sound level written above, or at the applicant's election, the existing hourly sound level from routine operation of the facility before any expansions plus 3 dBA.

(d) All equipment used in the construction of and maintenance activities at the solid waste facility must comply with applicable local and federal noise regulations, and include environmental noise control devices in proper working condition and maintained as originally provided with the equipment by its manufacturer.

(e) Sounds associated with the following are exempt from the sound level limits of this section:

(i) routine engine sounds from registered and inspected motor vehicles:

a. while operating on public ways, or

b. that enter the facility to make a delivery or pickup and that are moving, starting or stopping, but not when they are parked with the engine running for over 60 minutes in the facility.

(ii) the unamplified human voice and other sounds of natural origin.

(iii) emergency maintenance and repairs.

(iv) facility and vehicle warning signals and alarms so long as used in appropriate circumstances.

(v) safety and protective devices installed in accordance with the devices' installation instructions.

(vi) boiler start-up, testing and maintenance operations occurring no more frequently than once per month.

(vii) test operations of emergency equipment occurring in the daytime and no more frequently than once per week.

(viii) major concrete pours that must extend after 7:00 p. m., when started before 3:00 p. m.

(ix) snow removal, landscaping and street sweeping activities.

(x) sound from a regulated development received at a protected location when the generator of the sound has been conveyed a noise easement for that location. This exemption shall only be for the specific noise, land and term covered by the easement.

(3) Submissions. Applications must include evidence that affirmatively demonstrates that the proposed solid waste facility will not unreasonably adversely affect existing uses and scenic character, including the following information:

(a) The nature, location, design, and size of all buffers and visual screens within those buffers to be established or retained;

(b) A description of the existing land uses in the vicinity of the proposed solid waste facility, all airport runways within 10,000 feet of the facility; all historic sites, protected locations and established public viewing areas within 2,000 feet;

(c) A demonstration that the solid waste facility will comply with the noise standards in paragraph 2 above and that the applicant will make adequate provision to control noise and the sound levels from each source resulting from the routine operation of the facility at the property boundary and any protected locations within the area;

(d) Evidence that acoustic enclosure for noise, buffer strips and screens, or other noise reduction measures have been considered and implemented in the design of the solid waste facility.

G. No Unreasonable Adverse Effect On Air Quality

(1) Standards. The solid waste facility may not unreasonably adversely affect air quality:

(a) The applicant must obtain an air emission license if required by 38 M.R.S.A. section 581 *et seq*. The air emissions produced from either point or non-point sources must be in conformance with the current State Implementation Plan, as approved by the Environmental Protection Agency.

(b) The applicant must control fugitive dust and nuisance odor.

(c) Open burning of solid waste other than clean or painted wood waste, is prohibited. Wood that has been treated and other wastes, such as tires or waste oil, shall not be open burned.

(2) Submissions. Applications must include evidence that affirmatively demonstrates that the proposed facility will not unreasonably adversely affect air quality, including the following information, when appropriate:

(a) Evidence that an air emission license has been or will be obtained if required.

(b) Description of the actions that the operator will undertake to control fugitive dust from the solid waste facility when a problem attributable to the facility occurs beyond the property boundary.

(c) The identification of any sources of nuisance odors from the facility.

(d) An estimation of the area that would be affected by the nuisance odor, based on general experience in dealing with the material or process that is the source of the odors.

(e) Proposed systems for enclosure of nuisance odor-producing materials and processes, and proposed uses of technology to control, reduce or eliminate odors.

NOTE: ASTME 679-79 can be used for guidance for control of nuisance odors.

(f) Evidence that the solid waste facility will not unreasonably alter climate if the facility has or is proposed to have water cooling towers.

H. No Unreasonable Adverse Effect on Surface Water Quality

(1) Standards. A solid waste facility:

(a) May not discharge any water pollutants, directly or indirectly, that affect the state classification of a surface water body, as specified in 38 M.R.S.A. section 464;

(b) May not discharge any pollutant without first obtaining a license pursuant to 38 M.R.S.A. section 413;

(c) May not degrade water quality by contributing to the phosphorous concentrations in "waterbodies most at risk from new development" as defined in Chapter 502.

(d) May not cause the discharge of a nonpoint source of pollution to waters of the United States that violates any requirement of an area-wide or State-wide water quality management plan that has been approved in compliance with section 319 of the Federal Water Pollution Control Act, as amended.

(2) Submissions. Applications must include evidence that affirmatively demonstrates that there will be no unreasonable adverse effect on surface water quality, including evidence that:

(a) The applicant will comply with all applicable stormwater management standards of Chapter 500 of the Department's rules, if the proposed facility is in the direct watershed of "waterbodies most at risk from new development".

(b) A waste water discharge license has been obtained or will be obtained, if required by 38 M.R.S.A. section 413.

I. No Unreasonable Adverse Effect On Other Natural Resources

(1) Standards. The solid waste facility may not have an unreasonably adverse effect on other natural resources in the municipality or in neighboring municipalities. The proposed solid waste facility:

(a) Must conform to the standards of the Natural Resource Protection Act, 38 M.R.S.A sections 480-A to 480-Z, if proposed to be located in, on, over, or adjacent to a protected natural resource, and

(b) Must be permitted by the federal government for any activities that require a Federal Wetlands permit.

(2) Submissions. An application must include the following information, when appropriate:

(a) Evidence that a Natural Resource Protection Act application has been submitted or will be obtained when required under that Act (38 M.R.S.A. sections 480-A to 480-Z).

(b) Complete information as to whether a Federal Wetlands permit is required and on whether a Federal Wetlands permit application has been submitted.

J. Soil Types That Are Suitable and Will Not Cause Unreasonable Erosion

(1) Standards. The solid waste facility must be located on soils suitable for the nature of the undertaking and the facility must not cause unreasonable sedimentation or erosion of soil. To meet this requirement:

(a) The soils on the facility site must be suitable for the proposed solid waste facility.

(b) The design and implementation of erosion control measures must be conducted in accordance with "The Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices," prepared by the Cumberland County Soil & Water Conservation District and Maine Department of Environmental Protection (March 1991), unless other measures are approved by the Department.

(i) sediment caused by accelerated soil erosion must be minimized from runoff water before it leaves the proposed solid waste facility site or enters a protected natural resource. Suitable erosion control measures must be in place prior to any disturbance of soil.

(ii) any temporary or permanent structure designed and constructed for the conveyance of water around, through, or from the solid waste facility must be designed to limit the water flow to a non-erosive velocity.

(iii) all earth changes must be designed, constructed, and completed so that the exposed area of any disturbed land is minimized and is limited to the shortest reasonable period of time possible given the construction requirements. Permanent soil erosion control measures for all slopes, channels, ditches, and disturbed land area must be completed as specified by the Department, after final grading has been completed. Seeding must occur within 15 calendar days of final grading unless otherwise approved by the Department because of seasonal conditions. When it is not possible or practical to immediately and permanently stabilize disturbed land, temporary stabilization measures will be implemented as approved by the Department. In sensitive watersheds or on highly erodible soils or slopes of 20 percent or greater, the Department may require a more restrictive schedule for temporary and permanent stabilization of soil.

(iv) when vegetative cover is to be established as a temporary or permanent erosion control measure:

a. plant species and seeding rates must take into account soil, slope, climate, duration and use of the vegetative cover.

b. mulch must be provided at rates appropriate to ensure a minimum of soil and seed loss until vegetative cover is established.

c. reseeding must be done within a reasonable period of time if permanent vegetation is not established.

(v) all development plans must utilize existing topography and natural surroundings to the fullest extent possible.

(2) Submissions.

(a) An application must include a comprehensive erosion and sedimentation control plan that includes the following information:

(i) a statement of whether the proposed facility or activity is in the direct watershed of waterbodies most at risk from new development. For the purposes of this submission requirement, the Department will consider the direct watershed of a waterbody to be the land area that drains, via overland flow, natural or manmade drainage systems, other waterbodies or wetlands to that waterbody.

(ii) a description and location of all proposed construction activities that may result in soil disturbance,

(iii) a description and location of all existing and proposed on-site drainage,

(iv) the timing and sequence of all proposed land disturbances,

(v) a description and location of all proposed temporary and permanent erosion and sedimentation control measures, including the timing and sequence of completion and an indication of the suitability of the proposed measures to address the problems that are expected,

(vi) calculations for erosion control measures in accordance with best management practices, and

(vii) a proposed program for the maintenance of all erosion and sedimentation control facilities that will remain after construction is completed.

(b) Where applicable, the application must include a report showing that the soils are suitable to the undertaking including:

(i) test pit and soil boring information, and

(ii) an evaluation by an engineer, soil scientist, or other qualified individual.

K. No Unreasonable Risk That a Discharge to a Significant Ground Water Aquifer Will Occur

(1) Standards. The proposed solid waste facility may not pose an unreasonable risk that a discharge to a significant ground water aquifer will occur. Additionally, a solid waste disposal facility:

(a) May not overlie any significant sand and gravel aquifers;

(b) May not pose an unreasonable threat to the quality of a significant sand and gravel aquifer; and

(c) May not pose an unreasonable threat to the quality of an underlying fractured bedrock aquifer.

(2) Submissions. An application must contain the information that is required under the appropriate chapter of these rules for the particular type of facility involved.

L. Adequate Provision for Utilities and No Unreasonable Adverse Effect on Existing or Proposed Utilities.

(1) Standards. The applicant shall provide for adequate utilities and the proposed solid waste facility may not have an unreasonable adverse effect on existing or proposed utilities in the municipality or area served by those utilities.

(a) There must be adequate water supplies for the solid waste facility.

(b) Appropriate sanitary waste water disposal must exist for the solid waste facility.

(2) Submissions. An application must include evidence that affirmatively demonstrates that the applicant has made adequate provision for utilities, including water supplies, sewerage facilities and solid waste disposal, and that the proposed solid waste facility will not have an unreasonable adverse effect on existing or proposed utilities in the municipality or areas served by those utilities, including the following information, when appropriate:

(a) Verification that the facility will be served by the appropriate utilities.

(b) Evidence that a sufficient and healthful water supply will be provided.

(c) The identification of all aspects of the proposed solid waste facility that require access to or use of utilities, along with the provisions that have been made to use those utilities and to comply with any requirements and provisions of the utility.

M. Not Unreasonably Cause or Increase Flooding

(1) Standards. A solid waste facility may not unreasonably cause or increase flooding on-site or on adjacent properties nor create an unreasonable flood hazard to a structure.

(a) Except for an agronomic utilization site, a solid waste facility may not be located in a 100 year flood plain or restrict the flow of a 100 year flood.

(b) A solid waste facility must include a stormwater management system that controls run-on and run-off, and infiltrates, detains, or retains water falling on the facility site during a storm of an intensity up to and including a 25-year, 24-hour storm, such that the rate of flow of stormwater from the facility after construction does not exceed the rate of outflow of stormwater from the facility site prior to the construction of the facility.

(2) Submissions. An application must include evidence that affirmatively demonstrates that the facility will not unreasonably cause or increase flooding of the facility site or adjacent properties, will not create an unreasonable flood hazard, and will have no unreasonable effect on run-on, run-off, and/or infiltration relationships, including information such as the following, when appropriate:

(a) The most recent U.S. Geological Survey, Army Corps of Engineers or Federal Flood Insurance Administration 100-year frequency flood plain map of the area, if applicable.

(b) A narrative describing how the facility site is oriented within the watershed, identifying downstream ponds, lakes, and mapped wetland areas, and addressing the effects of facility site runoff on the watershed and nearby properties. The narrative shall also identify areas, buildings and facilities that historically flood or which may be affected by the facility site run-off and shall discuss the assumptions used in determining run-off curve numbers, time of concentration and travel time calculations for each drainage sub-area.

(c) Pre-construction drainage study plans showing existing contours, and all topographic features including but not limited to: buildings and facilities, natural and man-made drainage ways, streams, channels, culverts, cover type, elevation benchmarks and datum, catch basins, roads, drainage easements, hydrologic flow lines, hydrologic soil groups, and watershed boundaries (on and off site).

(d) Post-construction or phased drainage study plans showing final or phased contours, all relevant existing contours, and all proposed topographic and other features including but not limited to: buildings and other facilities, natural and manmade drainage ways, streams, channels, culverts, catch basins, roads, drainage easements, cover type, elevation bench marks and datum, hydrologic flow lines, hydrologic soil groups, and final or phased watershed boundaries (on and off site).

(e) Pre-construction stormwater calculations for 25-year, 24-hour storms including runoff curve numbers, time of concentration, and travel times for each sub-area.

(f) Post-construction or phased stormwater calculations for 25-year, 24-hour storms including: run-on controls, runoff curve numbers, time of concentration, and travel times for each sub-area along with calculations for routing the stormwater through detention areas and detention basins.

(g) Basin storage values and sizing calculations, including stage-storage curves and outlet velocities for each detention basin.

(h) Outlet and spillway detail and sizing calculations for each detention basin.

(i) Detail sheets showing plan and cross sectional views of the detention basins, outlet structures, emergency overflow structures, and associated riprapped areas. Basin cross sections must show and identify the water level elevations for the 25-year, 24-hour storms.

APPENDIX B: CARBON TO NITROGEN RATIOS (C:N) FOR RAW RESIDUALS COMMONLY COMPOSTED IN THE STATE OF MAINE

The following table is provided for guidance and includes many of the raw residuals that, to date, have been composted within the State of Maine. In addition to carbon to nitrogen ratio (C:N) values, percent nitrogen (% N) has been included to better characterize each residual. As a general rule, the lower the C:N the higher the putresibility of the residual and the greater the chance of producing nuisance odors. All of the following information was obtained from:

Rynk, R, ed. 1992. On-farm composting handbook. Northeast Regional Agricultural Engineering Service, Ithaca, New York. NRAES-54:106-113.

Residual	C:N	Range	%N	Range	Type
Mussel	2.2	--	3.6	--	IC
Blood	3.3	(3-3.5)	13.5	(13-14)	IC
Shrimp	3.4	--	9.5	--	IC
Fish	3.6	(2.6-5.0))	10.6	(6.5-14.2)	IC
Crab/Lobster	4.9	(4.0-5.4)	6.1	(4.6-8.2)	IC
Poultry Carcasses	5	--	2.4	--	IC
Hen Manure	6	(3-10)	8	(4-10)	N/A
Sewage Sludge	11	(5-16)	4.5	(2-6.9)	II
Food By-product	15	(14-16)	2.4	(1.9-2.9)	IB
Sea weed	17	(5-27)	1.9	(1.2-3.0)	IC/IB
Grass Clippings	17	(9-25)	3.4	(2.0-6.0)	IC/IB
Cull Potatoes	18	--	--	--	IB
Vegetable Produce	19	--	3.3	--	IB
Cow Manure	19	11-30	2.4	1.5-4.2	N/A
Hay	24	(15-32)	2.1	(0.7-3.6)	IB/IA
Horse Bedding	36	(22-50)	1.4	(1.4-2.3)	IB/IA
Fruit By-product	40	(20-49)	1.4	(0.9-2.6)	IB/IA
Corn Silage	41	(38-43)	1.3	(1.2-1.4)	IA
Apple Pomace	48	--	1.1	--	IA
Leaves	54	(40-80)	0.9	(0.5-1.3)	IA
Sawdust	442	(200-750)	0.24	(0.06-0.14)	IA
Newsprint	--	398-852	--	(0.06-0.14)	IA
Corrugated Cardboard	563	--	0.01	--	IA
Wood Chips	600	(451-1,313)		(0.06-0.23)	IA